John H. Redfield.

By Wm. M. Canby.

(with portrait.)

On the banks of the beautiful Connecticut and near the center of the State of the same name is to be found the place anciently and still called Middletown; and, in accordance with a custom nowhere so common as in New England, of retaining for offshoots from the original settlements the name of the mother town with a prefix or a suffix, the little hamlet, a few miles up the river, was of old called by the somewhat picturesque name of "Middletown Upper Houses," now, alas! changed to the unmeaning one of Cromwell. Here, on July 10, 1815, the subject of this sketch was born. He could claim John and Priscilla Aiden among his ancestors and was in every way of pure New England blood. Many of his family had been sea captains, a vocation nowhere represented by more honorable, hardy and vigorous men than on our northern coast. His father, William C. Redfield, at this time a country storekeeper in humble circumstances, was a man of enterprising character and of an unusually inquiring and vigorous mind. The son only knew his mother as an invalid and she died when he was but four years old; and although his father married afterward, he was again bereaved; so that his son owed much of his good bringing-up to a widowed relative who came to take charge of the household and who, according to the custom of those days, did not stint the lessons to be derived from the "New England Primer" and the "Shorter Catechism." Other lessons, more pleasant perhaps, came to him early from his father and served to stimulate his inherited scientific tastes.

The following pleasant account is of one of these which occurred when he was six years old during a long ride taken soon after the storm long known as the "Great September Gale." * "My father's habits of close observation led him to watch the fallen trees and the effects of that destructive wind. At Middletown the wind had been from the southeast and the trees lay

* See Oliver Wendell Holmes' poem "The September Gale."

Yours Truly
John H. Redfield

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with their heads northwestward; but on reaching Berkshire he was surprised to see that they lay in an opposite direction and he repeatedly called my attention to the fact. In conversing with the residents of that region as to the time these trees were prostrated he was still more astonished to learn that the wind, which at 9 P. M. had been from the southeast at Middletown, had been at Stockbridge from the northwest precisely at the same hour. * * * * It did not appear to him possible that two winds of such violence should be blowing against each other at the distance of only seventy miles. The only explanation of this paradoxical phenomenon was one which he was then led to accept hypothetically, but which he afterwards confirmed by years of observation and innumerable facts." It was thus that the elder Redfield was led to the theory of the rotary as well as progressive movement of storms which procured him so much note as a meteorologist.

Our friend's first public education came from the district school, which his father had taken great pains to have above the usual standard. In addition, there were the "spelling classes" and "friendly associations," and a small circulating library—agencies which he acknowledged to have been helps to him in his aspirations for knowledge, as they have been to many others. Of the effects of the "spellling class" exercises he says: "I am foolish enough to believe that those winter evening battles were more useful and creditable than some of the athletic contests which in these days are doing so much to brutalize young men, and which, by their attendant betting leading to the worst results of gambling, are tending to make old and thoughtful men raise the question whether colleges are not becoming institutions to be avoided."

Of books at this time there were but few, but all he could get he read with avidity. Like every one else, he was fascinated with Bunyan's Pilgrim's Progress, both as to the story and the quaint old prints. He writes: "That of Apollyon's battle with Christian so excited my imagination that when, being a little older, I was sent to the wood pile in the fast darkening twilight of a winter afternoon to bring in the evening supply of wood, I never felt altogether secure from that dreadful demon until the last armful was

fairly in;" which leads one to wish that these Apollyons would always scare the bad boys and never the good ones.

One other book, forgotten now perhaps, gave him the bent towards botany, which afterwards so much occupied him. This was Thornton's Grammar of Botany.

About this time steam navigation was occupying the father's mind and after some efforts in that way on the Connecticut his attention was turned to the Hudson. He was thus frequently in New York for long periods while the son's education was continued for a year and a half at Stamford. Finally, in 1824, the family was removed to New York. The boy was now sent to the High School where, under the influence and instruction of one of the teachers, a Mr. Barnes, he was instructed in mineralogy and had many a pleasant ramble in the country in his company. His school education was finally completed by a short course which he provided for himself at a private school, but between these two periods he attended the chemical lecture course of Dr. Torrey, an association which must have had great influence in his pursuits in after life. His first business occupation was in a dry goods store, where he continued long enough to acquire a thorough detestation of it. He then assisted his father in his steam transportation ventures and this occupied his business hours for many years. It is of more interest to us to know that his love of science continued and was intensified when, in 1836, he became a member of the New York Lyceum of Natural History, of which Dr. Asa Gray was then the Librarian and Superintendent. Here was commenced that friendship which was destined to be close and lasting. It was at this time that he acquired a taste for conchology, in which he made much progress and which resulted in a number of papers on this subject published in the Annals of the Lyceum. He thoroughly explored the country in the vicinity, over land much of which is now probably closely built upon, and in every way which the time at his command and his means permitted strove to advance the scientific interests of himself and his associates. As early as 1846 he became a member of the Academy of Natural Sciences, of Philadelphia. In 1843 he made a very happy marriage and this, perhaps, was the eventual cause of his removal to

Philadelphia in 1861, where he long held a prominent position in the extensive and well-known car wheel works of A. Whitney & Sons, with the members of which his marriage connected him. His allegiance was necessarily transferred from the Lyceum to the Academy, of which he soon became a life member, and was gradually advanced to many of its most important and laborious offices. Thus, in 1870, he became a member of its Council and was also made Conservator of its Botanical Section, the latter a most important office as it placed the various and very important herbaria in his charge. He was Corresponding Secretary of the Conchological Section in 1879, and after having been long a member of its Publication Committee was made its Chairman in 1891. It will thus be seen how important his services were to this institution and how great the esteem in which his good sense and active exertions as well as his wise and thoughtful counsel were held by his associates. But beyond all this, and especially after his retirement from business cares in 1885, he accomplished a great work which no one else connected with the Academy had time to do and for which, indeed, no one was better fitted than he. When he took charge he found four distinct herbaria as follows: that of Dr. C. W. Short; that of Schweinitz, composed principally of Fungi, very many of them types; the General Herbarium, and the North American Herbarium, the latter of which is of the utmost value, not only because of its size and completeness, but also because it contains a large number of the type specimens of Nuttall, Pursh and others of early botanists of this country. The specimens in these were loose in sheets of paper, very often those of more than one collector huddled in together, with the labels but loosely attached to the specimens. With great care and good judgment, and an indefatigable energy, he brought order out of this confusion, so that at last he had got the greater and more valuable parts of the herbaria arranged and mounted and properly catalogued. Nor did his benefations end with this, for he purchased all valuable sets of plants and bestowed them upon the Academy. The tender and appreciative minute adopted by it and hereafter appended is but a fitting testimony to his usefulness and unselfish devotion.

Mr. Redfield lived for many years in one of the pleasantest

parts of Philadelphia and quite close to the Academy. He made occasional botanical excursions, of which notable ones were to the mountains of North Carolina in company with Dr. Gray and other botanists. There could not have been a more delightfully cheerful and obliging travelling companion. The writer well remembers that on one occasion when at Linville Falls, in what was then the wildest and least frequented part of the country, Mr. Redfield "turned up missing," to the serious concern of the rest of the party. After considerable search he was found sitting on a mossy bank, writing up his diary with the utmost serenity, cheerfully answering anxious inquiries by saying, "Oh, I knew you would come for me." In later years his summers were spent on Mt. Desert Island. The excellent catalogue of its flora lately published by Mr. Rand and himself attest his industry while there.

It is impossible to speak too highly of Mr. Redfield's personal character. Honorable, sincere, courteous, cheerful, always ready to do a kind act or to say a gracious word, he displayed that true nobility of character which comes of right principle faithfully adhered to, yet without a trace of aceticism or austerity.

Mr. Rand writes: "He was always being good and doing good. I have letters lamenting his death from young botanists, whose names even he may not have remembered or known, all telling the same story,—'he was so good to us, so kind in his interest and help, so courteous to us in our ignorance.'" The Rev. Dr. Dickey said of him: "I have touched many good lives and found pleasure and example in close intercourse with many, * * * * but I have never touched a smoother life than this. * * * It was not the quietness of silence—it was like the soothing murmur of a mountain brook; there was a beauty and fragrance like the beauty and fragrance of wild flowers, in this simple yet vigorous life."

And so one cannot wonder that he won sincere and lasting affection and left a bright example of a right-living, true-hearted and attractive gentleman. Once, indeed, the serenity and happiness of his old age was broken by the stroke of a severe bereavement; but it only the better showed the strength of his character.

"And the more
Fate tried his bastions, she but forced a door
Leading to sweeter manhood and more sound."

After some weeks of failing health he died on the twenty-seventh of Febrauary last, in the eightieth year of his age.

A beautiful western grass, the *Redfieldia flexuosa* commemorates his name and services.

Appended are testimonials of learned societies and a bibliography.

FROM THE ACADEMY OF NATURAL SCIENCES.

The Academy of Natural Sciences of Philadelphia has heard with deep sorrow the announcement of the death of John H. Redfield, who, in his unselfish devotion to its interests, has long been one of its most active benefactors.

Always an earnest student of nature his last years of deserved freedom from business engagements were devoted to his favorite studies in connection with the Academy, and to the arrangement and care of the Herbarium.

The steady growth and admirable condition of the botanical collection constituted an enduring memorial of his industry and zeal.

As Chairman of the Publication Committee and Member of the Council the same fidelity and discretion characterized the discharge of his duties.

He was a man of strong but tender character; firm in his support of the right, but tolerant of all honest difference of opinion; cheerful, gentle, modest and cultured. Time to him was one of his most precious possessions, yet he was ever gladly at the service of those requiring advice or assistance.

He was an earnest student, a wise counsellor and a steadfast friend. His encouragement and loving sympathy endeared him to his associates, who felt for him a personal affection which enables them to appreciate the irreparable loss sustained by his family, to whom they would offer their heartfelt sympathy.

FROM THE NEW YORK ACADEMY OF SCIENCES.

The Academy has learned with sorrow of the death of Mr. John H. Redfield, at his home, in Philadelphia, on February 27th, 1895.

Mr. Redfield was one of the earliest members of the Lyceum of Natural History, having been elected in 1836. During his

years of residence in New York he was most active in furthering the work of the Lyceum, a frequent contributor to its proceedings and the author of several conchological papers which were printed in its Annals. In connexion with his father, Mr. W. C. Redfield, he published, in Vol. IV. of the Annals, the first description of fossil fishes from the Mesozoic rocks of America, proposing the name of the genus *Catopterus* and its type species *C. gracilis*, besides some others, for specimens from the Triassic beds at Durham, Conn. He was thus the pioneer in this important branch in American palaeontology. He held the office of Recording Secretary of the Lyceum in the years 1887–8, and of Corresponding Secretary for the entire period from 1839 to 1860. After his removal to Philadelphia he did not lose his interest in the Lyceum, but continued his relations with it as a Corresponding Member, not only through the whole period of its existence under the old name, but also when the organization was changed and enlarged into the Academy and down to the time of his death. When the memorial volume was published, in 1887, Mr. Redfield furnished a large amount of most valuable data and reminiscences, which are embodied and acknowledged at many points in the book.

Although personally known to but few of our present members, many have known of his great work in connexion with the Academy of Natural Sciences in Philadelphia, and by reason of this, and his early prominence in our Society, he has had our profound respect and grateful esteem. It is, therefore,

Resolved, That it is the sense of the Academy that in the death of Mr. John H. Redfield, American science has lost a critical and enthusiastic student, a liberal patron and a devoted friend; and the Academy a co-laborer who greatly aided in its early period of organization, as an officer and a scientific investigator, and who was almost the last to connect its present membership with the generation of its founders and pioneers.

FROM THE TORREY BOTANICAL CLUB.

Mr. John H. Redfield, a highly esteemed active member of the Club since the time of its organization, the last but one of its original incorporators, a frequent contributor to our publications, the Conservator of the Botanical Section of the Philadelphia Academy of Natural Sciences, and well-known to the botanical

world as an author and editor, died at his home in Philadelphia, February 27th, 1895. Therefore it is

Resolved, That the following record be made in our minutes: As a scientific co-laborer, we found in Mr. Redfield an enthusiastic lover of nature and of knowledge for its own sake, an energetic and persistent worker in the field and in the closet to the very end of a long and memorable life, and a gentleman of ripe culture and pleasant manners, always generous and helpful to others, and, though firm in his convictions as to what was right, ever modest and courteous in the expression of them.

Resolved, That in his death we mourn the loss of a valued associate and an ardent and faithful friend.

Resolved, That this action be printed in our proceedings and a copy thereof transmitted to the family of the deceased.

List of Scientific Papers and Notices by John H. Redfield.

1. Fossil Fishes of Connecticut and Massachusetts, with a Notice of an undescribed Genus. Ann. N. Y. Lyc. Nat. Hist. 4: 35. *pl. 2.* 1837.

2. Descriptions of some new Species of Shells. Ann. N. Y. Lyc. Nat. Hist. 4: 163. *pl. 2.* 1846.

3. On the distinctive Characters of *Cypraea reticulata* of Martyn and *Cypraea histrio* of Menschen. Ann. N. Y. Lyc. Nat. Hist. 4: 417. *pl. 1.* 1847.

4. Descriptions of new Species of *Bullia* and *Marginella*, with Notes upon S. B. Sowerby, Jr.'s Monograph of the latter Genus. Ann. N. Y. Lyc. Nat. Hist. 4: 491. *pl. 1.* 1848.

5. Description of new Species of *Marginella*, with Notes upon sundry Species of *Marginella* and *Cypraea*. Ann. N. Y. Lyc. Nat. Hist. 5: 224. 1852.

6. Descriptions of new Species of Helicidae. Ann. N. Y. Lyc. Nat. Hist. 6: 14. M. 1853.

7. Descriptions of new Species of Shells. Ann. N. Y. Lyc. Nat. Hist. 6: 130. *1 pl.* Ap. 1854.

8. Descriptions of two new Species of North American Helicidae. Ann. N. Y. Nat. Hist. 6: 170. D. 1850.

9. Description of a new Species of *Marginella*. Proc. Acad. Nat. Sci. Phila. 1860: 174. My. 1860.

10. Letter to His Excell. Rawson H. Rawson, Governor of the Bahama Islands, with a Chart of the Bahama Hurricane of Oct., 1866. In Gov. Rawson's Report in Blue Book for 1866. 2, 3. Mr. 1858.

11. Note on the first Discovery of *Schizaea pusilla*. Proc. Acad. Nat. Sci. Phila. 1869: 13. Ap. 1869.

12. Search for *Corema Conradii* in Monmouth County, N. J. Proc. Acad. Acad. Nat. Sci. Phila. 1869: 91. My. 1869; Amer. Nat. 3: 327. Au. 1869.

13. Notes upon the Monograph of the genus *Marginella* in Reeve's Conchologia Iconica. Tryon's Amer. Journ. Conch. 5: 88. *1 pl.* O. 1869.

14. New Locality of *Aspidium aculeatum* in Stony Clove, Catskill Mountains. Amer. Nat. 3: 495. N. 1867.

15. Observations on Marginellidae, introductory to a catalogue of the known recent and fossil species. Tryon's Amer. Journ. Conch. **6**: 2. Jl. 1870.

16. Are certain Species of *Botrychium* epiphytic? Proc. Acad. Nat. Sci. Phila. **1870**: 91. Au. 1870.

17. Rectification of the Synonomy of certain Species of *Marginella*. Tryon's Amer. Journ. Conch. **6**: 172. O. 1870.

18. Catalogue of the known Species, recent or fossil, of the Family Marginellidae. Tryon's Amer. Journ. Conch. **6**: App. 215. O. 1870.

19. Tetramerism in *Lilium auratum* Lindl. Bull. Torr. Bot. Club, **2**: 32. Au. 1871.

20. Oaks and Mistletoe. Bull. Torr. Bot. Club, **4**: 13. Ap. 1873.

21. Fertilization of *Asarum Canadense*, Bull. Torr. Bot. Club, **4**: 21. Je. 1873.

22. Dr. Torrey and Torrey's Peak. Bull. Torr. Bot. Club, **5**: 18. Ap. 1874.

24. On *Asplenium ebenoides*. Proc. Acad. Nat. Sci. Phila. **1874**: 154. D. 1874.

25. Geographical Distribution of Ferns of North America. Bull. Torr. Bot. Club, **6**: 1. Ja. 1875.

26. Notes upon *Anychia dichotoma*. Bull. Torr. Bot. Club, **6**: 61. N. 1875.

27. Note upon Dr. Torrey's first Trip to the New Jersey Pines, prefixed to a letter of his dated July 9, 1818. Bull. Torr. Bot. Club, **6**: 82. Mr. 1876.

28. Notice of the Botanical Correspondence of Zacharias Collins, in Possession of the Academy of Natural Sciences of Philadelphia. Proc. Acad. Nat. Sci. Phila. **1876**: 81. Jl. 1876.

29. Southern Localities of *Lygodium palmatum*. Bull. Torr. Bot. Club, **6**: 232. My. 1878.

30. Obituary notice of Robert H. Brownne. Bull. Torr. Bot. Club, **6**: 291. F. 1879.

31. *Aspidium aculeatum* in Pennsylvania. Bull. Torr. Bot. Club, **6**: 291. F. 1879.

32. *Aspidium aculeatum* at Bushnellsville Clove in Catskill Mountains. Bull. Torr. Bot. Club, **6**: 331. Au. 1879.

33. Notes of a Botanical Excursion into North Carolina. Bull. Torr. Bot. Club, **6**: 331. Au. 1879.

34. Dissent from Mr. Meehan's Views upon the Timber-line of high Mountains. Proc. Acad. Nat. Sci. Phila. **1880**: 345. N. 1880.

35. Herbarium of the Academy of Natural Sciences of Philadelphia. Bull. Torr. Bot. Club, **8**: 42. Ap. 1881.

36. The Muhlenberg Herbarium. Bull. Torr. Bot. Club, **8**: 80. Jl. 1881.

37. *Aspidium Lonchitis* Swz. in Colorado. Bull. Torr. Bot. Club, **8**; 105. S. 1881.

38. Occurrence of *Hieracium aurantiacum* in the Catskill Mountains. Bull. Torr. Bot. Club, **8**: 112. O. 1881; Proc. Phila. Acad. Nat. Sci., **1881**: 429. D. 1881.

39. Biographical Sketch of Dr. William Baldwin. Bot. Gaz. **8**: 233. Je. 1883.

40. Note upon the Date of a Letter from Dr. Torrey to Amos Eaton. Bot. Gaz. **8**: 317. O. 1883.

41. *Corema Conradii* and its Localities. Bull. Torr. Bot. Club, 11: 97. S. 1884.

42. Obituary Notice of John Williamson. Bull. Torr. Bot. Club, 11: 104. S. 1884.

43. Further Notes upon *Corema Conradii.* Bull. Torr. Bot. Club, 12: 93. S. 1885.

44. Insular Vegetation; Flora of Great Duck Island, Maine. Bull. Torr. Bot. Club, 12: 103. O. 1885.

45. On the Flora of Martha's Vineyard and Nantucket. Proc. Acad. Nat. Sci. Phila. 1885: 378. D. 1885.

46. Still further Notes upon *Corema Conradii.* Bull. Torr. Bot. Club, 13: 220. N. 1886.

47. *Euphrasia officinalis* on the Coast of Maine. Bull. Torr. Bot. Club, 232. D. 1886.

48. On Insular Floras. Bull. Torr. Bot. Club, 13: 245. D. 1886.

49. Rediscovery of *Corema Conradii* in Monmouth County, N. J. Bull. Torr. Bot. Club, 16: 192. Jl. 1889; Proc. Acad. Nat. Sci. Phila. 1889: 135. Jl. 1889.

50. *Pinus Banksiana* with *Corema Conradii* on Schoodic Peninsula, Coast of Maine. Bull. Torr. Bot. Club, 16: 295. N. 1889: Proc. Acad. Nat. Sci. Phila. 1889: 344. N. 1889.

51. *Stellaria hemifusa* on the Coast of Maine. Bull. Torr. Bot. Club, 17: 38. F. 1890.

52. Notice of the Occurrence of *Scabiosa australis* near Pittsfield. Mass. Bull. Torr. Bot. Club, 19: 341. N. 1892.

53. Obituary Notice of Isaac C. Martindale. Bull. Torr. Bot. Club, 20: 98. 1893.

54. Preliminary Catalogue of the Plants growing on Mt. Desert and adjacent Islands. By Edward L. Rand and John H. Redfield. Cambridge. 1894.

A fossil marine Diatomaceous Deposit at St. Augustine, Florida.

By Charles S. Boyer.

In 1886 an artesian well was sunk at the Ponce de Leon Hotel, at St. Augustine, Florida. Samples of earth from different depths were sent to Mr. Lewis Woolman, who proposes to publish the results of his investigations into the geological character of the different strata. A layer of bluish clay at a depth of between 85 and 135 feet was found to contain diatoms, spicules, foraminifera and a few polycistinae. Unfortunately, the material was very small in amount, and the diatoms occurred in but two layers at the depths of 90 and 120 feet, so that the list furnished below, although exhaustive of the material obtained, appears to but indicate the existence of a richer bed which, it is hoped, may be